

Amendment and Response

Applicant: Cyrille de Brubisson, et al.

Serial No.: 10/689,143

Filed: October 20, 2003

Docket No.: 100204485-1

Title: DEFECTIVE DATA SITE INFORMATION STORAGE

SEP 28 2006

REMARKS

The following remarks are made in response to the Office Action mailed July 18, 2006, in which claims 3, 20-23 and 26 are allowed, claims 1, 5-14 and 24 are rejected, and claim 2 is objected to. With this Response, claims 1 and 10 are amended, and claim 2 is cancelled. Claims 1, 3, 5-14, 20-24 and 26 remain pending in the application and are presented for reconsideration and allowance.

Claim Rejections under 35 U.S.C. § 101

Claims 10-14 stand rejected under 35 U.S.C. 101. The Office Action alleges that claim 10 only claims a host and storage device (with particular data values stored therein). The Office Action states that the particular value attributed to data stored on a device (without any useful, concrete, and tangible result) does not define for patentability purpose and is also non-functional descriptive material (e.g., it is just data with no function set forth).

Claim 10 has been amended to specify that the defect information maintained by the storage device is usable to hide the defective data sites from the host. As amended, claim 10 makes clear the function of the data stored on the storage device, and further makes clear that a useful, concrete, and tangible result is provided. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 10-14 under 35 U.S.C. 101.

Claim Rejections under 35 U.S.C. § 102

Claims 1, 5, 6, 8-11, 13, 14 and 24 stand rejected under 35 U.S.C. 102(b) as being anticipated by Billings et al. (U.S. Patent No. 6,223,303).

As set forth below under the heading "Allowable Subject Matter," the limitations of "objected to" claim 2 have been inserted into independent claim 1, thereby placing independent claim 1 as amended in allowable condition.

With regard to independent claims 5 and 24, the Office Action alleges Billings et al. teaches storing defective data site information for a storage device (fig. 6, defect management table; fig. 7, section 166), the method comprising: determining a first defective data site associated with the storage device (fig. 7, 166, fig. 3, first defective data site D1), determining a second defective data site associated with the storage device (fig. 7, 166, and fig. 3, second defective data site D2), determining a spacing value that represents spacing

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between the first defective data site and the second defective data site; and storing the spacing value in or on the storage device (fig. 3 shows the boundary of tier 1 (140) which consists of first defective data site and tier 2 (142) which also consists of second defective data site, and relative distance between these two tiers is the distance between two defective data sites, and the spacing is on the disk).

With regard to claim 10, the Office Action alleges Billings et al. teaches an electronic system, comprising: a host (fig. 1, element 36); a storage device operably couplable to the host and having data sites for storing data (fig. 1, element 34) the data sites comprising defective data sites (fig. 2); wherein the storage device maintains defect information (fig. 2), the defect information comprising a spacing value the represents spacing between defective data sites of the storage device (figs. 3 and 4).

The rejections of independent claims 5, 10 and 24 are respectfully traversed. Under 35 U.S.C. §102, the cited reference must show each and every feature of the claimed invention. Extension of or speculation as to the cited teaching is permitted only when *necessarily present* in the disclosed apparatus or method. In other words, if a particular feature is not specifically disclosed it can only be relied upon under 35 U.S.C. §102 if and only if such feature is necessarily present in the disclosed apparatus or method. See, *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference”), and *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (“The identical invention must be shown in as complete detail as is contained in the ... claim”).

Independent claims 5 sets forth a storage device operably couplable to a host and having data sites for storing data, the data sites comprising defective data sites, wherein **the storage device maintains defect information reportable to the host, the defect information comprising a spacing value that represents spacing between defective data sites of the storage device.**

Independent claims 10 sets forth an electronic system comprising: a host; and a storage device operably couplable to the host and having data sites for storing data, the data sites comprising defective data sites; wherein **the storage device maintains defect**

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information, the defect information comprising a spacing value that represents spacing between defective data sites of the storage device, the defect information usable to hide the defective data sites from the host.

Independent claims 24 sets forth one or more computer-readable media having stored thereon a computer program that, when executed by a processor, causes defective data site information storage according to the following method: determining a first defective data site associated with the storage device; determining a second defective data site associated with the storage device; determining a **spacing value that represents spacing between the first defective data site and the second defective data site; and storing the spacing value in or on the storage device.**

Applicants respectfully submit that Billings et al. fails to show each and every feature of independent claims 5, 10 and 24. In particular, Applicants submit that Billings et al. makes no teaching or suggestion regarding *at least storing a spacing value that represents spacing between defective data sites of the storage device*, and such feature is not *necessarily present* in the disclosed apparatus. Billings et al. teaches "padding" regions bounding defective data sites using a two-tiered padding process (abstract, col. 7, lines 32-46; col. 8, lines 37-41). Defective data sites D1 and D2, tier one marginal data sites 140, and tier two reserved data sites are listed in a defect discovery table (col. 9, lines 41-46, Fig. 4). A defect management table is generated from the defect discovery table (col. 10, lines 33-54). However, none of the data stored in the defect discovery table (Fig. 4) or the defect management table (Fig. 6) of Billings et al. is a **spacing value that represents spacing between defective data sites of the storage device**. Billings et al. makes no teaching or suggestion regarding **storing a spacing value that represents spacing between defective data sites of the storage device**, as set forth in independent claims 5, 10 and 24. There certainly is no teaching or suggestion in Billings et al. that the noted claim element is *necessarily present*. The Office Action suggests that the distance between two defective data sites in Billings et al. can be determined by the relative distance between the boundaries of tier one data sites (140) and tier two data sites (142), and the spacing is on the disk. However, even if the spacing value or distance between two defective data sites can be determined in such a manner (and it is not clear that it can be so determined), *Billings et al. does not teach or suggest such a value be stored on the storage device*. To the contrary,

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Billings et al. teaches that data as described in Figs. 4 and 6 is stored on the storage device; none of that data is a spacing value that represents spacing between defective data sites of the storage device. For at least these reasons, Applicants respectfully submit Billings et al. fails to teach or suggest each and every feature of the invention as set forth in independent claims 5, 10 and 24. Accordingly, withdrawal of the rejection of claims 5, 10 and 24 under 35 U.S.C. §102(b) is respectfully requested.

Claims 6, 8, 9, 11, 13, and 14 each depend, either directly or indirectly, from one of independent claims 5 and 10, which are in allowable condition for at least the reasons set forth above. Accordingly, dependent 6, 8, 9, 11, 13, and 14 are also in allowable condition, and withdrawal of the rejection under 35 U.S.C. §102(b) is respectfully requested.

Claim Rejections under 35 U.S.C. § 103

Claims 7 and 12 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Billings et al. (U.S. Patent No. 6,223,303) in view of Hidaka (U.S. Publication No. 2004/0184315).

The Office Action alleges Billings et al. teaches the claimed invention, but fails to teach the storage device is a magnetic random access memory (MRAM). Hidaka is cited as teaching a memory device made of a thin film magnet. The Office Action finds it would have been obvious to one of ordinary skill in the art to modify Billings et al. because Hidaka teaches MRAM devices capable of non-volatile storage with low power consumption.

Claims 7 and 12 depend directly from independent claims 5 and 10, respectively. As set forth above, Billings et al. fails to teach the invention as claimed in independent claims 5 and 10. Hidaka fails to remedy the deficiencies of Billings et al., in that Hidaka also fails to teach or suggest storing a spacing value that represents spacing between defective data sites of the storage device. For at least this reason, Billings et al. and Hidaka, alone and in combination, fail to teach or suggest the invention of claims 7 and 12, and withdrawal of the rejections under 35 U.S.C. 103(a) is respectfully requested.

Allowable Subject Matter

The Examiner's indication that claims 3, 20-23 and 26 are allowed is respectfully acknowledged.

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The Office Action objected to claim 2 as being dependent upon a rejected base claim, but indicated the claim would be allowable if rewritten in independent form including all limitations of the base claim and any intervening claims.

With this Amendment, the limitation of claim 2 has been inserted into independent claim 1, and claim 2 cancelled from the application. Accordingly amended claim 1 is now believed in allowable condition, and notice to that effect is respectfully requested.

CONCLUSION

In view of the above, Applicant respectfully submits that pending claims 1, 3, 5-14, 20-24 and 26 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 1, 3, 5-14, 20-24 and 26 is respectfully requested.

No fees are required under 37 C.F.R. 1.16(h)(i). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 08-2025.

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The Examiner is invited to contact the Applicant's representative at the below-listed telephone numbers to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to either Matthew B. McNutt at Telephone No. (612) 767-2510, Facsimile No. (612) 573-2005 or N. Rhys Merrett at Telephone No. (425) 402-4638, Facsimile No. (425) 489-9594. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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Sept 28, 2006


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CERTIFICATE UNDER 37 C.F.R. 1.8:

The undersigned hereby certifies that this paper or papers, as described herein, are being transmitted via facsimile to Facsimile No. (571) 275-8300 on this 28th day of September, 2006.

By:

Name: Matthew B. McNutt